

A Subsurface Geological Field Study by using Multi-Well Image Logs, Case Study from Khangiran Field, Iran

This mini geological field study carried on multi-well image logs on the Khangiran gas field in northeast Iran in the Kopet Dagh geological basin. The Image log run in the single well and archive as a solo-data. Due to its expensive prices for acquisition and processing, they run very rare in developed fields. Because of single well processing and interpretation treatment, the minimum information would gain from them. In Khangiran field only three wells have image logs which were drilled into the Mozduran formation (main gas reservoir) of this field which are locating at north flank, saddle and southeast flank of this anticline structure. If we facing with every image log as a single well, we can gain fractures study, main stresses directions and sedimentary study. While by applying this method, no any replies were given to the following main queries:

- 1- Why fracture intensities or fracture frequencies are different in these wells? Which structural parameters control fracture azimuth/Strike directions? If they are local or regional parameters? If they are faulting or folding related? Can these explained parameters be predictable for future drill well?
- 2- Why the main stress directions in these wells are more or less identical? If these stress direction are follow up the regional stress direction? If yes or no why?
- 3- Why observed three directions for interpreted cross-bedding in these wells? How three cross-bedding rosette models from these wells could be correlated? Which paleo-geography model can interpret this model? Where is the best direction for paleo-current?
- 4- By combining the under ground contour map and three image logs interpreted, if it is possible predict the growth evolution of this structure? How?

By combining the multi-well study, we are able to answer all above queries and have the most precise view from this field and we can plan better in future for developing field by applying the best direction for directional drilling or locating the best site for future drilling wells.